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ABSTRACT

This manual contains 1) a one-page discussion of the development in 1966 of "Policy Negotiation Simulation," a game which simulates the collective bargaining negotiations between school board and teachers' representatives; 2) description of the subsequent use of the Policy Negotiation Simulation as "a simulation for building simulations" tracing the steps in development of other simulation games from the original "priming game"; 3) descriptive examples of the application of the Policy Negotiation Simulation model to the development of seven other simulation games to illustrate four different uses: to teach, to study, to counsel, and to experiment; 4) explanation of the difference between "programed games" for the development of specific intellectual skills or processes and "simulations" which emphasize the content and dynamics of real world situations; and 5) a descriptive list of four programed games and 27 simulations with publication sources. (JS)

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THE POLICY NEGOTIATION SIMULATION

(A Reference Manual)

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A WHOLE NEW GAME

Several years ago, Dr. Fred Goodman of The University of Michigan's School of Education decided that teachers' organizations and school boards were rapidly moving toward collective bargaining--something for which they had virtually no experience or training. Teachers' representatives and school board representatives, it seemed to Dr. Goodman, would have to learn "a-whole-new-game."

In 1966, Dr. Goodman and his graduate students built a model of the collective bargaining that was taking place in the Saginaw, Michigan Public School System. As the task progressed, the physical apparatus and mechanisms needed became more complex. At the same time, however, the more complex model could be adapted to simulate more collective bargaining and policy negotiating situations.

Adaptability and ease of simulating new situations soon became a second, but equally important, goal to Dr. Goodman and his students. As the apparatus evolved, considerable effort was made to make it "easy-to-change." As a result, the final product the, POLICY NEGOTIATION SIMULATION, is also simulation for building simulations.

BUILDING YOUR OWN SIMULATION

Most of the simulations built using the POLICY NEGOTIATION SIMULATION were developed as follows:

First, a group of people (usually from a conference, convention or class) play a priming game such as the 1966 Saginaw Teachers Bargaining Game.

Then, those people who are interested in building their own simulations sign up for extra help.

The first 2 - 4 hours are usually spent defining the roles, constituency, issues, outside forces, etc. This often turns out to be a spiraling process, two or three constituencies suggest half a dozen issues. These issues, suggest that another group should be involved. The new group, in turn, suggests half a dozen new issues, etc.

After the "structure" of the situation has been sketched out, influence and prestige are calibrated. Then a group of interested bystanders are asked to help out by playing for an hour or so.

During this play, the one or two people who know the most about the situation "norm" (figure out and write down) the outcomes for each issue <u>as it is played</u>. The timer must be turned 2 or 3 times each round to allow the "normers" enough time to do their work.

During the first playing of the game, everyone agrees to abide by the decisions of the normers. Afterward, however, the group discusses whatever the players feel "needs-to-be-changed."

Playing and revision with the same group (or new groups) continues until the designer feels that it is accurate enough for his purposes.

Frequently, the first few plays of a new game result in large numbers of new issues brought in through the "blank issues" and fairly major revisions of the roles and their influence as well as the issues.

Another way to build your own simulation, would be to put down what you know and then invite your colleagues to critique and contribute one-at-a-time to your understanding of the situation. Then, when you feel confident enough of your understanding of the situation (and the accuracy of your simulation) you could invite your colleagues to play it as a group.

EXAMPLE APPLICATIONS

The POLICY NEGOTIATION SIMULATION has many uses.

- To Teach
- To Study
- To Counsel
- To Experiment

The next few pages will sketch out several examples of four of these uses:

1st TEACHING EXAMPLE — The original 1966 teacher-school board priming game was intended to introduce new negotiators to the structure, pressures and frustrations of their roles and the dynamics of the "bargaining table."

2nd TEACHING EXAMPLE — With the original priming game as a model, many other situations could be simulated in training people to carry out new roles. Imagine, for example, simulations of the credit, supervisory and management committees of credit unions: large - small, urban - rural, employer - community, etc.

Exposure to the issues in other credit unions could sensitize the new member to the range of issues and interests that he will need to identify and develop. Some of the issues could represent innovations that credit unions <u>should</u> be considering if they are not already doing so.

Finally, credit union committee members need to know quite a bit about the state laws governing their organization and its operations. The most commonly used of this background knowledge could be organized (or just indexed) according to the issues. Between rounds, the players could study the legal background information related to the issues they were interested in.

1st STUDY EXAMPLE — At the 1969 WICHE (Western Interstate Commission of Higher Education) Conference. The POLICY NEGOTIATION SIMULATION was run for 150 academic Vice Presidents, Deans and Department Heads. After this, those who wished to, signed up for assistance in building simulations of their own situations.

As a result of this experience, the academic vice president of a large Southeastern university decided to build a simulation of the tenure committee he had just set up at his own school. It took two hours to set up the "structure" (who were the representatives, what were their constituencies like, what were the issues, etc.) and two more hours to play and "norm" (figure out the issue outcomes) the half dozen rounds of play.

Only half of the players were familiar with university tenure policies and problems but:

(A) Observers felt the discussions which took place during the play were unusually good compared to the tenure committees they had sat on.

(B) The players introduced about a dozen new issues which everyone agreed were as important, if not more so, than those his committee had been discussing.

In short, the academic vice president left the conference with a broadened agenda, the realization that tenure questions could not be resolved without looking at promotion policy as well, the decision to add representatives of two more groups within the university who were not now represented but whose cooperation would be needed (alumni representatives and student representatives) and a copy of the game to start using with his own tenure committee.

2nd STUDY EXAMPLE — A remedial summer school social studies class in Fife Lake, Michigan built a simulation of their city council instead of the usual memorizing "facts-about-our-state," reports and papers. The test of this semester long project was having it played by the city council.

(NOTE: After building simulations of their own situations, Dr. Goodman would like to have classes in different parts of the state, different states, and different countries, exchange copies of their games.)

(NOTE: "Simulation" projects have also been done in history classes: building a simulation of Boston, Mass. at the time of the tea party.)

3rd STUDY EXAMPLE — The Blackstone Rangers in Chicago played a priming game and then built a game of their neighborhood. The roles were the Mafia (Al Capone), a preacher, two gang leaders and the Top Cop. Some of the issues were:

- getting the "wineheads" off the streets
- curfew hours, and
- curfew enforcement.

In this case, the teachers learned as much or more than the students as the students "studies" their environment.

(NOTE: The New Detroit Committee has considered having various groups build games of Detroit and then exchanging them to both explore one's own environment and to improve communication and understanding between groups.)

1st COUNSELING EXAMPLE — At the same 1969 WICHE Conference (1st Example), one of the participants who wished to simulate a situation was the academic dean of a small Catholic girls school located a few blocks from a nationally known state university. The sisters running this school realized that a number of long range trends were rapidly transforming their school's environment and that they needed to make major changes in their policies and operations if the college was to survive. As a result, they had given their new (male) academic dean the responsibility of helping them make long range plans and decisions instead of reacting to day-to-day crises as they had been doing.

To help this school's executive committee start thinking and planning for the future, the dean built a simulation of his school, its likely situation and the probable issues in 1975, five years hence.

During the norming and first play, it quickly became apparent that the issues fell into two groups. One group involved issues of no real consequence; these were agreed by everyone and resulted in pleasant conversation rather than debate.

The second set of issues all had large long range consequences, especially in terms of the influence and prestige of individual executive committee members themselves. Instead of discussing these implications openly, the players kept them off the agenda and began to exert most of their influence with the outside social forces: the order, the alumni, etc. The dean examined that the group was behaving exactly as the sisters were.

Armed with these insights, the dean designed a set of procedures for using the game with his executive committee which would allow them to discover and start discussing these dynamics without letting the situation become too threatening.

1st EXPERIMENT EXAMPLE

In building a simulation of their school, the other players assigned their principal several times more influence than any of them had individually. He was surprised. That was not what he wanted. He insisted that he wanted to be an equal.

Even though he had no more pegs than anyone else, the other players continued to act as if he were much more influential. Instead of waiting until he made his move, they changed their minds as soon as he moved.

Just saying he wanted no more influence than the others was not enough. Now that he knows this, however, he can start to experiment to see what will make a difference:

- announcing that he will not take a position on the issue at all?

- putting his pegs into prestige?

- only attending every third round?

More importantly, once he succeeds in getting his influence down to what he wants, he can get a better idea of whether or not he would really be happy with the results. He may change his mind when he sees what the others would do.

THE PEOPLE WHO PLAY GAMES
(as opposed to the games people play)

Very different kinds of people are often interested in the same simulation for very different reasons. Some people, for example, may be interested in the transfer of behavior between real and simulated situations:

A psychologist specializing in tests and measurements might ask:	:	"Will a man's behavior in a simulated situation predict what he will do in the real situation?
An educator specializing in training people to deal with future opportunities and problems might ask:	:	"Can simulations teach people how to perform in situations that don't exist yet?"

Others are interested in using simulations to find out about the world:

A psychologist specializing in game theory might ask:	:	"How does the structure of rewards and punishments control behavior and are there optimal strategies for these situations?"
A sociologist specializing in "Iconics" (people's beliefs about the world) might ask:	:	"What can the simulations people build of their own situations tell me about those situations?"

Still others are more interested in controlling the emotional aspects of learning situations:

A conference leader might ask:	:	"Can a simulation early in the program increase involvement, receptiveness to new ideas, etc?"
A management consultant might ask:	:	"Can simulations make it easier and more productive for a group of executives to discuss emotionally loaded issues?"

PROGRAMMED GAMES AND SIMULATIONS

A programmed game is a series (or nest) of games designed to develop specific "symbol manipulation" skills and "logical thinking processes" such as those found in algebra, set theory, symbolic logic or transformational grammar. Each game within the "programmed series" presents an additional level of complexity and difficulty (as many as 30.)

In addition, the basic format and rules of the series contain a number of positive and negative feedbacks which adjust the complexity and difficulty of the game to ability and development of the players involved. As a result, programmed games with as few as 5 levels or sub-games can be simple enough for early-elementary students and yet challenging to university professors in mathematics and logic.

Simulations, on the other hand emphasize the content and dynamics of "real-world" situations rather than the development of specific intellectual skills. Simulations attempt to capture the main features and dynamics of important situations without becoming bogged down in or ignoring the overwhelming complexity of most important "real-world" situations. Simulations can be used to help students "explore" layers of complexity one at a time or they can be used to help a student to experience the emotions of someone in a situation or role.

Both programmed games and simulations permit and, in fact, encourage much more competition and co-operation, more social interaction among students than present classroom methods.

PROGRAMMED GAMES

EQUATIONS (WNP):

A series of 5 games developing skill in addition, subtraction, multiplication, division, exponentiation, and radicals in a variety number systems including binary, decimal, octal, etc. The first game can be used with 1st graders and the 5th with college math majors.

ON SETS (WNP):

A series of 5 games developing set theory skills ("The New Math"). The first game can be used with 1st graders and the latter games with college students.

QUERIES AND THEORIES (WNP)

A series of games developing deductive logic skills such as those found in formulating research hypotheses transformational grammar. The age range is grade school to graduate school.

WFF'N PROOF (WNP)

A series of 21 games developing symbolic logic skills within the "Polish Notation System." The age range is grade school to graduate school.

SIMULATIONS

(NOTE: The abbreviations, AAI, AGA, etc. are the sources. Their names and mailing addresses are listed on page 15.

CARIBOU HUNTING (AAI):

A social studies board game in which children explore the relationship of technology and social organization in a culture using the example of caribou hunting among the Netsilik Eskimos of Pelly Bay.

COMMUNITY RESPONSE (Disaster) (AGA):

A simulation of a community hit by a localized natural disaster, each player tries to dispel his anxiety for family members who may be within the stricken area, while at the same time tries to operate his community post which is vital to the community's well-functioning and eventual overcoming of the disaster.

CONSUMER (AGA)

A model of the consumer buying process involving players in the problems and economics of installment buying; consumers compete to maximize their utility points for specific purchases while minimizing their credit charges; the three different credit agents also compete.

CRISIS (ASGP)

A simulation of an international crisis over a mining area of vast importance.

DEMOCRACY (Legislature) (AGA)

A composite of eight different games which simulate the legislative process; in the basic version players act as representatives, giving speeches and bargaining with other players. The object is to pass those issues which are most important to their constituents and thereby get re-elected.

DISUNIA (Int.)

Divided into 13 states on a new planet in 2087, students struggle with problems Americans became entangled in during the period of the Articles of Confederation, 1781-1789. The simulation culminates in a constitutional convention students see the necessity of calling while they represent their states Nova Yuk=New York; Soah Coah=South Carolina, Vespa=Virginia, etc.

DIVISION (Int.)

Divided into four factions supporting Lincoln, Douglas, Breckinridge, and Bell, students study 14 issues dividing Americans during the 1850's: extension of slavery into the terriorites; the Dredd Scott Decision; the protective tariff; the perpetuity of the Union, etc. The simulation culminates in two days when factions pressure, bargain, block one another during the last six "weeks" of the election of 1860.

ECONOMIC SYSTEM (AGA)

A simulation of the interrelationship of a competitive economic system. Mine owners, manufacturers, workers and farmers market, produce and consume goods while trying to make a profit and maintain a high standard of living.

ELEMEMTARY SCHOOL
SOCIAL STUDIES (AAI)

A fourth grade social studies course with a strong emphasis on games and three dimensional materials. The course uses anthropological content to illustrate five social concept areas: family, technology, life cycle, resources, and political organization. Five pre-industrial societies around the world are presented, each an example of a type of pre-industrial economy.

EMPIRE (EDC)

A board game for junior high school students which illustrates mercantile competition between American colonies and England in the 1730's. Seven teams of players, such as London merchants, colonial farmers, and British West Indies planters, bargain over prices, buy and sell goods, and move ships across the Atlantic.

FARMING (HSGP)

An agricultural investment game staged in three different periods of U.S. History.

GRAND STRATEGY (AAI)

A game of international relations and diplomacy in a crisis wartime situation. The time period covers five years from 1914 to 1918, and players represent European nations. Their objective is to achieve their nation's political aim at minimum military and economic costs. Nations form alliances and move army divisions and ships on an outline of the European continent. Although there is some historical secrecy, the outcome need not be the same as in 1918.

THE HELPING HAND STRIKES
AGAIN (SEUM)

Simulates the information processes (and problems) of helping professionals and their agencies whose job it is to improve the performance of others by giving them information.

INTER-NATION
SIMULATION (SRA)

This is a simulation of international relations, including the interrelationship of domestic and foreign policy. Five "Decision Making Exercises" have been written to supplement social science courses relating to American government:

- Constitutional Convention
- Presidential Campaign
- Federal Budget and Interest Groups
- Congressman At Work
- Congressional Committees

KOLKHOZ (BOC)

A game about the collective farm economy in the Soviet Union. Students role play the Kolkhoz manager, peasant families, and the State banker/representative of the Gosplan.

LIFE CAREER (AGA)

A simulation of certain features of the "labor market," the "education market" and the "marriage market," as they now operate in the U.S. and as projections indicate they will operate in the future; the players work with a profile of a fictitious person, alloting his time and activities among school, studying, a job, family responsibilities and leisure time.

METFAB (HSGP)

Simulates some factors involved in locating a factory. A part of a provisional unit on "Manufacturing."

NAPOLI (HSGP)

A simulation of the legislative process and its interrelationship with parties.

PANIC (Int.)

Divided into economic pressure groups of 1920-1940 in different regions of the United States, students have their grades directly influenced by their ability and by fate (that is, the Great Depression). Students study the prosperity of the 1920's and the depression of the 1930's. The simulation culminates in mock Congressional committees have a mock Congress trying to solve the economic crisis. For in 1929 earlier in the game, students have lost from 0 to 100% of their wealth when the stock market crashed.

PARENT - CHILD (AGA)

Simulates the relationship between a parent and an adolescent in respect to five issues differentially important to both; parents compete against parents and children compete against children to develop the best strategies in their relationships.

PLANS (HSGP)

In this simulation, interest groups try to use influence and produce change in American society.

POLICY NEGOCIATION SIMULATION (CSF)

Simulates the collective bargaining negotiations between the school board and teachers representatives of a medium-sized city. Once the "priming game" has been learned, however, the physical apparatus can be used to simulate any policy making or negotiating situation; has been used by Social Studies classes to build simulations of their city councils and by history classes to simulate

present, students also research ways of solving current racial problems. Pressure cards force students to propose solutions to their city council, elected from fellow class members.

the situations surrounding important historical events such as the Boston Tea Party.

POLLUTION (AAI)

Designed to teach elementary school students about economic, technological, and political aspects of air and water pollution control. The first part of the game is a brief simulation of the generation of water and air pollution. The students, acting as residents of a New England town, produce goods and find that they thereby produce pollution. Both air and water pollution are physically represented on a gameboard. As the yearly cycles of production proceed, pollution is seen to affect the economy. The players are motivated to control pollution. The second phase of the game is a simulation of a town meeting in which the players meet to decide on a method of controlling pollution. They are given a list of technological alternatives and costs. Polution was designed for the Curriculum Development Center of the Wellesley School System of Wellesley, Massachusetts.

POTLATCH (AAI)

Illustrates an important institution in the social and economic life of the Kwakiutl Indians of the Pacific Northwest. The game is part of the unit "Studying Societies" developed for the ninth and tenth grade by the Anthropology Curriculum Study Project of the American Anthropological Association. For information, contact Dr. Malcolm Collier, Director of the Project, 5632 Kimbark Avenue, Chicago, Illinois.

RAID (AAI)

Designed to teach disadvantaged groups of students the problems and possible solutions to the crime problems of the city. Players are divided among a police team, with resources of men and weapons, a racketeer team, with resources of men and weapons, and teams representing city blocks, with resources of men and money. The police team attempts to catch the racketeers; the racketeers attempt to extort money and recruit men from the city blocks, and the city blocks seek to maintain or increase wealth and population.

SEAL HUNTING (AAI)

A social studies board game in which children experiment with hunting and sharing strategies with an unpredictable food supply. Children play Eskimos and seals on opposite sides of the ice.

SUNSHINE (Int.)

Students are "born" by pulling race identity tags from a hat at the beginning of the simulation. During the remainder of the game, students wear their identities (tags which are either white, tan, brown, or black and which show education, job, income, and street address). The classroom is divided into Sunshine, a mythical city with six neighborhoods with varying degrees of segregation and integration in housing and schooling. While studying the history of the Negro from slavery to the

SOURCES

AAI: Abt Associates Inc.
55 Wheeler Street
Cambridge, Massachusetts 02138

AGA: Academic Games Associates,
Center for Study of Social
Organization of Schools,
Johns Hopkins University
Baltimore, Maryland 21218

BOC: BOCES
845 Fox Medow Road
Yorktown Heights, New York 10598

CSF: Community Systems Foundation
2200 Fuller Road
Ann Arbor, Michigan 48105

EDC: Education Development Center
Cambridge, Massachusetts

HSGP: High School Geography Project
P.O. Box 1095
Boulder, Colorado 80302

Int: Interact
P.O. Box 262
Lakeside, California 92040

PS: Project Simile
Western Behavioral Sciences
Institute
1121 Torrey Pines Road
LaJolla, California 92037

SEUM: Dr. Fred Goodman
School of Education
University of Michigan
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SRA: Science Research Associates
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New Haven, Connecticut